FLORENCE COPPER

FLORENCE COPPER INC.
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florencecopper.com

November 4, 2020

Nancy Rumrill
Groundwater Protection Section (WTR-4-2)
US EPA, Region IX
75 Hawthorne St.
San Francisco, CA 94105

RE: Request for Approval Pursuant to § II.E.6.g of UIC Permit No. R9UIC-AZ3-FY11-1

Dear Nancy:

Pursuant to § II.E.6.g of the UIC permit, Florence Copper requests EPA's approval to include within the production test facility (PTF) operations the use of treated water to accomplish the injection and recovery zone rinsing that is required by § II.I.1.c of the permit.

Under our proposal, Florence Copper would employ multimedia filtration, reverse osmosis (RO) and pH adjustment to treat solution from the wellfield and use the resulting permeate to supplement the rinsing injectate authorized by § II.E.6.e of the permit. The permeate would contain minimal salinity and mineral acidity. Use of permeate, in addition to the rinsing injectate authorized by § II.E.6.e, would reduce consumption of fresh groundwater and decrease evaporative requirements for water reporting to the Process Water Impoundment (an aquifer protection-permitted facility).

Based on testing, a profile of the analytes that would be present in the permeate is provided in the table below. As shown in the table, the quality of the permeate would be similar to the quality of the rinsing injectate (fresh groundwater) authorized by § II.E.6.e of the permit. As part of our proposal, Florence Copper would include periodic testing of the permeate that is employed for the rinsing operations. No other changes to the monitoring requirements of §§ II.F.2 and II.F.7 are proposed.

Analyte	**Arizona WQS (mg/L)** From Table 3.1 Appendix E of the Permit	**National Primary Drinking Water MCL (mg/L)**	**Makeup Water (mg/L)** From Table 3.1 Appendix E of the Permit	**RO Permeate [1] (mg/L)**
Metals	----	----	----	----
Aluminum	None	None	<2.0	0.23 – 0.95
Antimony	0.006	0.006	<0.2	not analyzed
Arsenic	0.05	0.01	<0.0005	<0.0038 - < 0.02
Barium	2	2	<0.05	not analyzed
Beryllium	0.004	0.004	<0.002	not analyzed
Cadmium	0.005	0.005	<0.002	<0.0031

Taseko

Calcium	None	None	61	1.1 – 5.5
Chromium	0.1	0.1	<0.03	<0.00066 – 0.011
Cobalt	None	None	<0.1	<0.00061
Copper	None	1.3	0.044	0.94 – 4.3
Iron	None	None	0.34	0.07 – 0.29
Lead	0.05	0.15	<0.04	<0.002
Magnesium	None	None	14	0.76 – 3.5
Manganese	None	None	<0.02	0.022 – 0.11
Mercury	0.002	0.002	<0.001	n/a
Nickel	0.1	None	<0.05	<0.0014
Potassium	None	None	6.2	<0.31
Selenium	0.05	0.05	<0.04	not analyzed
Silver	None	None	<0.1	not analyzed
Sodium	None	None	120	5.1 - 7.3
Thallium	0.002	0.002	<0.05	n/a
Zinc	None	None	0.095	<0.0068
Anions	----	----	----	----
Bicarbonate	None	None	160	not analyzed
Chloride	None	None	160	<18.5 – 14.9
Fluoride	4	4	<0.5	<0.96
Nitrate	None	10	1.9	n/a
Phosphate	None	None	<0.5	n/a
Sulfate	None	None	76	26.5-150
Field Parameters	----	----	----	----
TDS	None	None	550	65 - 120
pH	None	None	7.2	2 – 4 *
Radiochemicals	----	----	----	----
Uranium	None	0.03	0.013	0.0046 – 0.017

[1] These analytical results are representative permeates generated from samples taken at the PTF

* The pH would generally be adjusted to be > 5, using sodium bicarbonate or other neutralizing agents prior to injection

If you have any questions or need additional information to process our request, please don't hesitate to let me know. I can be reached at 520-316-3710 or brentberg@florencecopper.com.

Thank you.

Sincerely,

Brent Berg
General Manager
Florence Copper Inc.